

AMENDMENT TO THE DRAWINGS

Figures 1-7 have been amended. The attached sheets of formal drawings replace the original sheets including Figures 1-7.

REMARKS/ARGUMENTS

Claims 1-13 were pending in this application. According to the May 4, 2005 Office Action, claims 1-13 were rejected and the specification and drawings were objected to. Applicants have amended claims 1-2, 4-6, 9, 11, and 13 and have canceled claim 3. Accordingly, claims 1-2 and 4-13 are under consideration. Applicants have also amended the specification and Figures. Applicants maintain that the amendments do not introduce any new matter.

Objection to the Drawings

In paragraph 1 of the Office Action, the Examiner objected to Figures 1-7 because the labels are too small and blurred, the lines are blurred, and the plots are blackened. In response thereto, applicants are submitting herewith a new set formal drawings, including Figures 1-7, to replace previously presented Figures 1-7.

In paragraph 2 of the Office Action, the Examiner objected to Figure 1 because the SSN lead is connected to the VCC power rail and is also being used as a logic input to switch 15. Applicants note that the connection of SSN to the VCC power rail was a graphical error and have amended Figure 1 to show the SSN lead as a general input lead to circuit 10. Applicants note that this change is not new matter. For example, the “Truth Table” of Figure 2 and the specification at paragraphs 18-24 indicate that the SSN lead is used to select which current source (I50 or I250) is combined with current source I25 and that the selection between these two current sources specifies the frequency range of the oscillator. As described at paragraph 35 of the specification, the oscillator of the present invention can be applied to the field of fluorescent lighting, for example, where it may be desirable to operate the ballast in a “dual range of oscillator frequency values,” varying the frequency range of the oscillator (i.e., setting the value at the SSN lead) based on the power-up status of the fluorescent lamp. Accordingly, the specification and Figures support the use of the SSN lead as a general input lead. In accordance with the change to Figure 1, applicants have also amended the specification at paragraph 22 to clarify that the SSN lead is a general input lead.

In addition to the above change to Figure 1, applicants have also amended Figure 1 to remove the AC power indication (i.e., the sine wave) from power VCC input 11 and control voltage VVCO input 12. As is apparent from Figure 1, VCC input 11 is a DC source. Similarly, as indicated in the specification at paragraphs 19-20, for example, voltage VVCO 12 is not an AC source but rather, can be set across a range of voltages (such as 0 to 5 volts) to control the

frequency value of the oscillator.

Objection to the Drawings Not Showing Every Feature of the Claimed Invention

In paragraph 3 of the Office Action, the Examiner objected to the drawings for not showing every feature of the invention specified in claims 1, 6, 9, and 13. In response to the Examiner's objection regarding claim 1, applicants have amended the claim to recite a "switch control," a "plurality of current sources," and a "switching circuit." In addition, applicants have amended the claim to recite that the switching circuit is

connected to the output of the switch control and [is] operable to select which of the plurality of current sources is connected to the timing element and [is] further operable to cause the connection based on the output of the switch control; ... the connection of the selected current source influencing the value of the timing element to modify the output of the oscillator.

Applicants have also canceled from claim 1 the limitation of "the plurality of operational ranges being related to frequency ranges for an output of the oscillator." Applicants respectfully submit that amended Figure 1 now shows every feature of the invention as recited by amended claim 1.

As a result of amending claim 1, applicants have amended claims 2 and 4-5 and have canceled claim 3, the limitations of which are now recited by claim 1.

The Examiner objected to claim 6 for reciting "varying at least one of the first and second time intervals," indicating that the drawings only cover varying both intervals. Applicants respectfully disagree and note that amended Figure 1 shows varying either both time intervals or varying only one time interval to vary the oscillator frequency. Specifically, switch 15 has an OCOMP input from comparator 13 and an SSN input, as described above. The SSN input value determines whether switch 15 selects a current source I50 or a current source I250 to combine with current source I25 to charge capacitor CT. Based on the input voltage at VVCO input 12, comparator 13 drives OCOMP and specifies "when" the selected current source I50 or I250 is combined with current source I25.

As such, assume that the SSN input to switch 15 is held constant such that current source I50, for example, is selected to combine with current source I25 and further assume that the input voltage at VVCO input 12 is varied. As the VVCO input value is varied between different values, the amount of time current source I25 charges the capacitor and the amount of time both current sources I25 and I50 charge the capacitor vary. In other words, as the VVCO input value is varied, both time intervals vary.

Assume now that the VVCO input value is held constant and that the SSN input varies between selecting current source I50 and current source I250 (note that the “Truth Table” of Figure 2 and the specification at paragraph 35 describe this scenario). In this case, the first time interval, as dictated by current source I25, never changes because VVCO is constant. However, by switching between the current source I50 and I250, the second time interval changes given that the two current sources charge the capacitor at different rates. Hence, Figure 1 shows varying either one or both time intervals.

Similar to the objection to claim 1, the Examiner objected to claim 9 for reciting “output ranges.” Applicants have amended claim 9 to now recite a plurality of oscillator “output values” rather than “output ranges.”

The Examiner objected to claim 13 for reciting an “adjustable timing device,” indicating that the capacitor (which the Examiner equates to the “adjustable timing device”) is not shown to be adjustable. In response thereto, applicants have amended claim 13 to recite a “plurality of current sources,” rather than an “adjustable timing device,” and to recite a “switch for switching among the plurality of current sources,” rather than a “timing device input for adjusting the timing device.” Applicants respectfully submit that Figure 1 now shows every feature of the invention as recited by amended claim 13.

Objection to the Specification

In paragraph 4 of the Office Action, the Examiner objected to page 5, lines 14-16 (i.e., paragraph 20) of the specification for suggesting that the frequency ranges are provided by changing the values for VVCO, but that this is not supported by the drawings. In response to the Examiner’s objection, applicants have amended paragraph 20 to clarify that the values for VVCO determine the frequency values within a given frequency range. Paragraph 20 continues to specify that the invention is not limited to two frequency ranges, as did previous paragraph 20.

The Examiner also objected to page 6, lines 22-29 (paragraph 24) of the specification, indicating that the paragraph does not correctly employ the terminology “frequency ranges” and in particular, that “[s]witching between I50 and I250 does not change the frequency range.” In response thereto, applicants have amended paragraph 24 to clarify the use of the term “frequency range” and to clarify the operation of current source I250, as illustrated in Figure 1.

Applicants also respectfully note that switching between I50 and I250 *does* change the frequency range. Specifically, as discussed above, switch 15 has an OCOMP input from comparator 13 and an SSN input. The SSN input value determines whether switch 15 combines

current source I50 or current source I250 with current source I25 to charge capacitor CT. Depending on which current source is selected, two different “frequency ranges” are possible (i.e., 25kHz - 50 kHz or 25kHz - 250kHz) (see, e.g., specification, paragraphs 19-20 and the “Truth Table” in Figure 2). Hence, switch 15 establishes the frequency range of the oscillator based on the SSN value. As for comparator 13, it drives the OCOMP input of switch 15 and specifies when during the capacitor charge cycle that switch 15 switches in current source I50 or current source I250, thereby obtaining a given frequency output value within the selected frequency range.

The Examiner also indicated that page 7, lines 3-5 of the specification do not make sense because while the specification indicates that signals VG25 and VG250 are supplied to “various other components,” the drawings only show signals VG25 and VG250 being supplied to switches MP2 and MP8. In response thereto, applicants have amended page 7, lines 3-5 (i.e., paragraph 25) to indicate that signals VG25 and VG250 are only supplied to switches MP2 and MP8.

Rejection of Claims 1-13 under Paragraph 112, First Paragraph

In paragraphs 6, 7, and 8 of the Office Action, the Examiner rejected previously presented claims 1-13 under 35 U.S.C. 112, first paragraph, for not disclosing the best mode contemplated by the inventor, for failing to comply with the written description requirement, and for failing to comply with the enablement requirement. In particular, with respect to claims 1, 6, 9, and 13, the Examiner indicated that the drawings and specification do not show or described the claimed embodiments.

As indicated above, applicants have amended claims 1, 9, and 13 and respectfully submit that the drawings and specification now show and describe circuitry for the claimed embodiments. As for claim 6, as discussed above, applicants respectfully submit that the drawings and specification show and describe circuitry for “varying at least one of the first and second time intervals.”

Based on the foregoing, the Examiner is requested to kindly withdraw the rejection under 35 U.S.C. 112, first paragraph, for failing to comply with the best mode requirement, the written description requirement, and the enablement requirement.

Rejection of Claims 1-13 under Paragraph 112, Second Paragraph

In paragraph 10 of the Office Action, the Examiner rejected previously presented claims 1-13 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Regarding claim 1, in response to the Examiner's rejection with respect to the "switching control" and whether this is a means, applicants have amended claim 1 to recite a "switch control" and to clarify that the switch control is a means. In response to the Examiner's rejection regarding the indirect mentioning of the "switching circuit," applicants have amended claim 1 to clarify that the switching circuit is part of the integrated circuit. The Examiner also indicated that the phrase "plurality of operational ranges" is misdescriptive. As indicated above, applicants have canceled this limitation from claim 1.

In accordance with the changes to claim 1, applicants have amended claim 2 to recite that the "switch control is a comparator."

Regarding claim 6, the Examiner indicated that the claim limitation of "combining the first time interval and the second time interval to obtain an oscillation frequency" is misdescriptive since the two time intervals only make up half the oscillation period and therefore posses insufficient value to determine the frequency. In response thereto, applicants have amended claim 6 to recite "combining the first time interval and the second time interval and thereafter discharging the capacitor to obtain an oscillation frequency," thereby reciting a full oscillation period. With respect to the Examiner's rejection regarding the phrase "varying at least one of" being misdescriptive, as discussed above, applicants respectfully submit that either one or both time intervals can be varied.

Regarding claim 9, the Examiner indicated that the "timing component" and "timing element" terminology in lines 2 and 3 is confusing. In response to the Examiner's rejection, applicants have amended claim 9 to consistently recite a "timing component." Applicants have also amended claim 11 to be consist with this change.

The Examiner also rejected claim 9 indicating that "a switch for switching between timing sources to vary the timing interval based on cumulative timing sources" is misdescriptive since the timing sources are not accumulated. Applicants respectfully disagree. As described in the specification a paragraphs 21-22, for example, current source I25, which acts as a timing source, is always on to charge the capacitor. Switch 15 switches in an additional current source (i.e., timing source) "in combination with current source I25 to increase the speed at which the capacitor charges." Hence, the timing interval of the capacitor is based on accumulated current sources, in other words, I25 in combination with an additional switched in current source.

Regarding claim 13, the Examiner indicated that "an adjustable timing device" is misdescriptive because the timing device terminology is referring to a capacitor and the capacitor is not adjustable. As indicated above, applicants have amended claim 13 to now recite a "plurality of current sources," rather than an "adjustable timing device," and to recite a "switch

for switching among the plurality of current sources," rather than a "timing device input for adjusting the timing device," thereby addressing the Examiner's rejection. The Examiner also rejected claim 13 indicating that the limitation of "the control output being operable to influence the timing device input to select the second slope" does not make sense. Consistent with the above changes, applicants have amended claim 13 to now recite "the control output being operable to influence the switch to select the second slope."

Lastly, in response to the Examiner's rejection with respect to "indicative of a value" being misdescriptive, applicants have amended claim 13 to cancel this limitation.

Applicants respectfully submit that each of the Examiner's rejections of claim 1-13 under 35 U.S.C. 112, second paragraph, have been addressed. Accordingly, the Examiner is requested to kindly withdraw this rejection.

Conclusion

Applicants respectfully believe that the present response addresses all issues raised in the most recent Office Action. Applicants further believe that, in view of the foregoing discussion, the application is now in condition for allowance and earnestly solicit notice to that effect. However, if the Examiner deems it would in any way facilitate the prosecution of this application, he is invited to telephone applicants' counsel at the number given below.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents and Trademarks, P.O. Box 1450, Alexandria, VA 22313-1450, on July 15, 2005

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Respectfully submitted,



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